

APPLICATION FOR LETTERS PATENT

FOR

COMMUNICATION METHOD

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COMMUNICATION METHOD

FIELD OF THE INVENTION:

The present invention relates to the field of communication, and more
5 particularly to a method for optimizing the compression and transmission of
communications.

BACKGROUND OF THE INVENTION:

Wireless communication network devices are proliferating at a rapid rate.
10 Such devices usually comprise a small data-capable phone or handheld
computer-like device (i.e. PDA) that permits a user access to a data network
such as the Internet. These wireless devices, being comparatively recent
developments in a previously wired communication universe, have continued to
use communications protocols that are virtually identical to those used for wired
15 telephone devices, personal computers and servers.

One problem of utilizing the existing protocols for wired devices in
connecting wireless devices to a wireless communications network, such as the
Internet, is the fact that these protocols apply a set of rules which are rendered
20 invalid, or at least inefficient, in the wireless environment. The basic
assumptions about a network are different when that network is implemented at
least partially by wireless connections.

One example of the above concerns the manner in which network congestion is detected, and the mechanism for correction of such congestion. More specifically, the basic communication protocols utilized for Internet Connectivity are Transport Control Protocol (TCP) and Internet Protocol (IP).

5 These protocols are typically used together, and thus are referred to as the TCP/IP protocol. The TCP/IP protocol is a communication standard that is documented in the Internet Engineering Task Force (IETF) Request for comments (RFC): RFC-793 1981-09, RFC-1072 1988-10, RFC-1693 1994-11, RFC-1146 1990-3, RFC 1323 1992-5.

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The TCP frame is embedded within the IP packet, which also includes an identifying header. According to the TCP/IP protocol, an acknowledgement is transmitted from the recipient to the sender of a packet based on the header information. Packet transmission frequently includes subjecting the packet data to a compression algorithm to conserve transmission bandwidth. The compression step consumes an amount of time dependent upon the quantity of data in the packet. However, the sending terminal may continue to send packets at a steady rate that is higher than those packets can be compressed and routed through the network. The TCP/IP protocol handles congestion using a commonly known "leaky bucket" algorithm. In the leaky bucket algorithm, packets can be sent to a router even though its buffer is already full. Packets received by a full buffer are discarded, and thus do not result in a receipt acknowledgement message being transmitted to the sending device.

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